

# « CAD Inn' 0.65 »

## for CATIA V5 and ARAS Innovator

# User's Guide

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<http://www.plmlab.fr/index.php?page=cadinn>

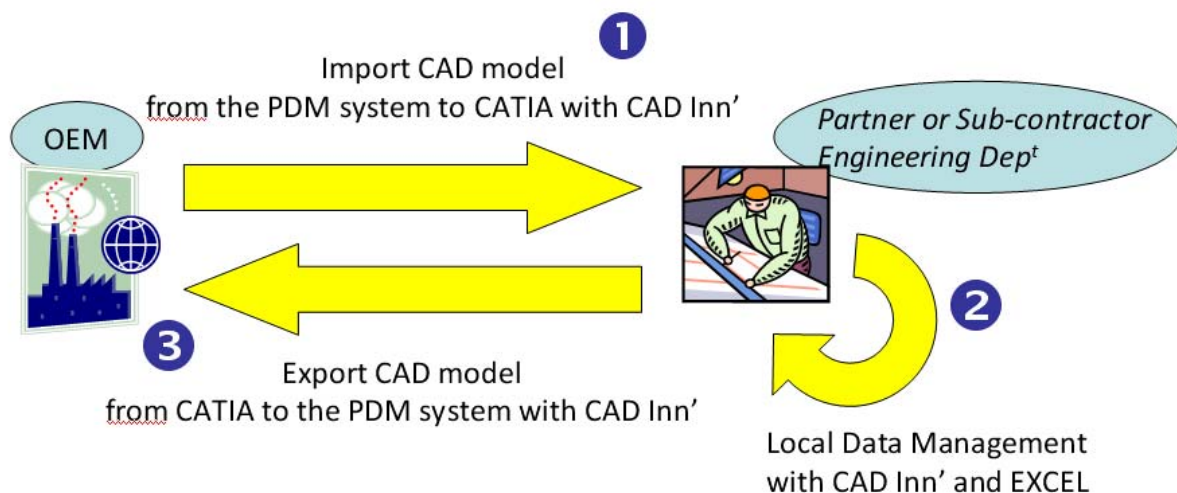
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## 1. Presentation & requirements

**CAD inn'** is a tool as simple as possible to help CAD users to manage their own CAD data. It's a first step to go to CAD data management and later to a Product Data Management system as Aras Innovator.

**WINDCHILL from PTC is no longer supported by CAD inn'**  
**The PX1 licence from Dassault Systems is no longer required**  
**CAD inn' is free on charge**

The main use case is the following :



## 2. Configure your local workstation

- Unzip the Cadinn package which has been downloaded
- Create two subfolders in your **My documents** folder :
  - Cadinn
  - CadinnWork
- Copy into Cadinn folder, the following files :
  - cadinn\_x-xx.catvba
  - cadinn.ini
  - all the **\*.bas**, **\*.cls** and **\*.frm** files like DMU\_mounting.bas or ARAS\_connecting.bas
- The CadinnWork will be used for save all the CAD data generated by Cadinn (but you'll can choose another target directory)

You can use another folders with CAD Inn. If you do, you'll have to set the right folders when using the macro. See below "Configuring the folders" to know how to do that.

## 3. Configure CADINN.INI file

Even you don't want to manage your data with an ARAS innovator server, a **cadinn.ini** file has to be present in your **My documents\Cadinn** sub-folder. The content of this file is the following :

```
' #####
'
'           This file has to be moved in 'My documents\cadinn\cadinn.ini'
'
' #####

' Profil Name

profilename==MyProfile

' Server type = aras

servertype==aras

' EndPointUrl : something like http://xxx.yyy.zzz/InnovatorServer/Server/InnovatorServer.aspx

endpointurl== http://xxx.yyy.zzz/InnovatorServer/Server/InnovatorServer.aspx

' vaultUrl : something like http://xxx.yyy.zzz/InnovatorServer/vault/vaultserver.aspx

vaulturl== http://xxx.yyy.zzz/InnovatorServer/vault/vaultserver.aspx

' database : the database's name for Aras

database==xxxYYYzzz

' your aras login

userlogin==xxxx

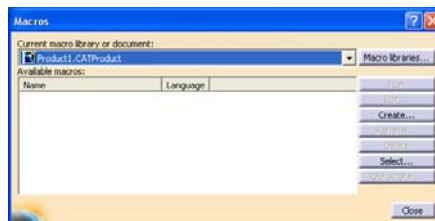
' your password (you don't need to encrypt it with a MD5 method, CAD Inn will do it !)

userpassword==yyyyy
```

## 4. Install the macro

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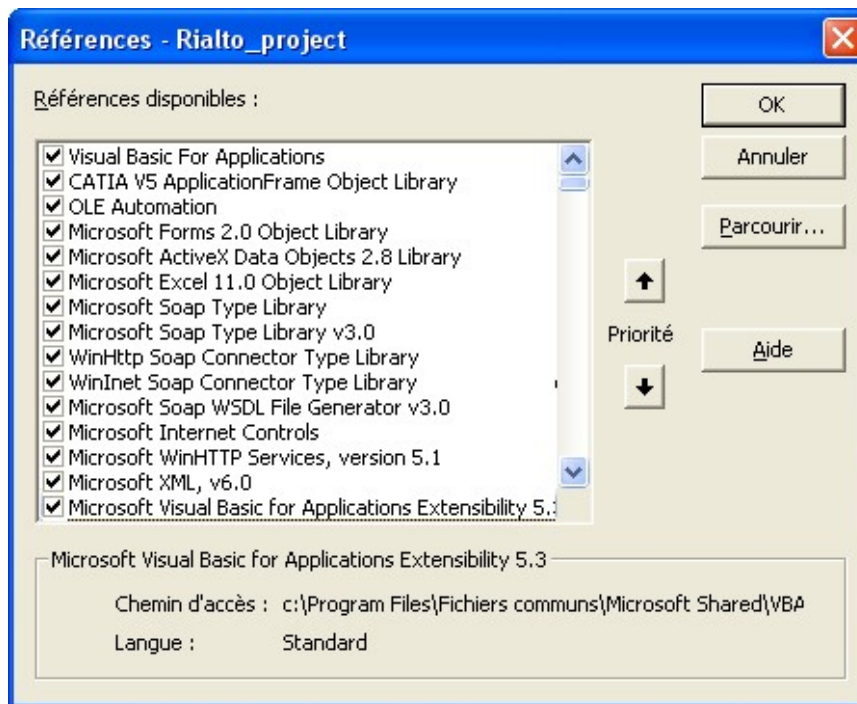
- Run CATIA V5
- Run the command **Tools/Macro/Macros...** :



- Run the command **Macro libraries ...**
  - Select **VBA projects** library type
  - Run the command **Add existing library ...**
  - Find and select the **cadinn\_x-xx.catvba** file
  - **Close** the window
- Cadinn** is now installed on your workstation.

## 5. Configure VBa for CATIA V5

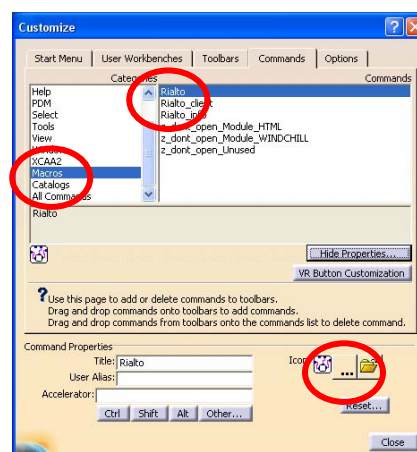
- Run **Tools / Macro / Macros ...**
- Select **CADINN**
- Select **Edit** command
- Run **Tools / references**
- Now you have to check all the following librairies (and of course also all the CATIA V5 librairies available) :



Some libraries have to be downloaded and installed because there aren't available by default. But you'll find them easily on the web.

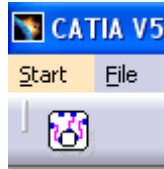
## 6. Create a shortcut to CAD inn'

- Run the command **View / Toolbars / Customize**
- Select the **Commands** tab
- Select **Macros** then **Cadinn**
- **Show properties** and select an icon (what you want, it doesn't matter)



- Switch to the **Toolbars** tab
- Create a new toolbar called **Cadinn**
- Select this new toolbar and **Add commands**
- Select the **Cadinn** command
- Close the window

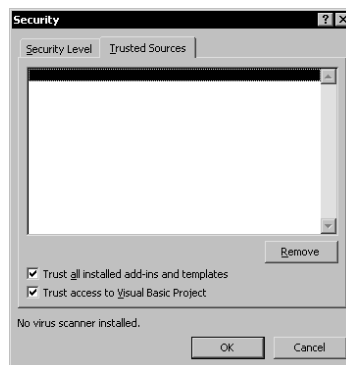
You have now a new icon on the current workbench; it is a shortcut to CAD inn'



## 7. Excel configuration

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You have to configure the following security option : ***Trust access to visual project***



## 8. ARAS Innovator server configuration

---

You have to declare :

- a new file type **CATIA\_V5\_PART** in Administration / FileTypes :

Name	Description	Ext.
CATIA*		
CATIA	CATIA Model	model
CATIA_V5_PART	DS CATIA V5 Part	CATPart

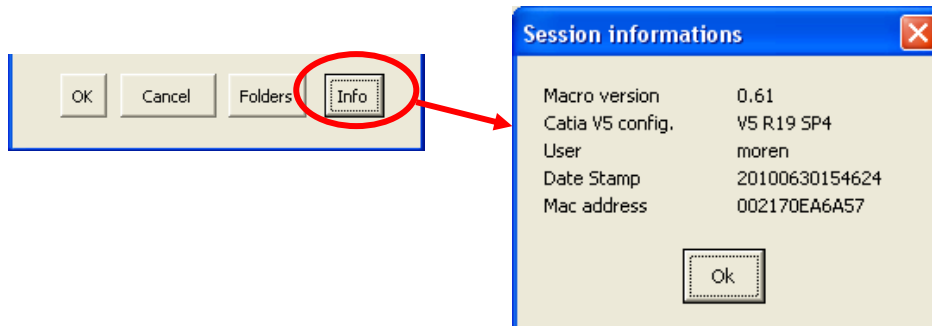
- new properties for the **BOM instance** type in Administration / ItemTypes : ix, iy, iz, jx, jy, jz, kx, ky, kz, ox, oy, oz. All the properties has a **float** data type.

Properties			
Name	Label	Data Type	Data Source [...]
ix	ix	Float	
iy	iy	Float	
iz	iz	Float	
jx	jx	Float	
jy	jy	Float	
jz	jz	Float	
kx	kx	Float	
ky	ky	Float	
kz	kz	Float	
ox	ox	Float	
oy	oy	Float	
oz	oz	Float	

## 9. Informations concerning CAD inn'

---

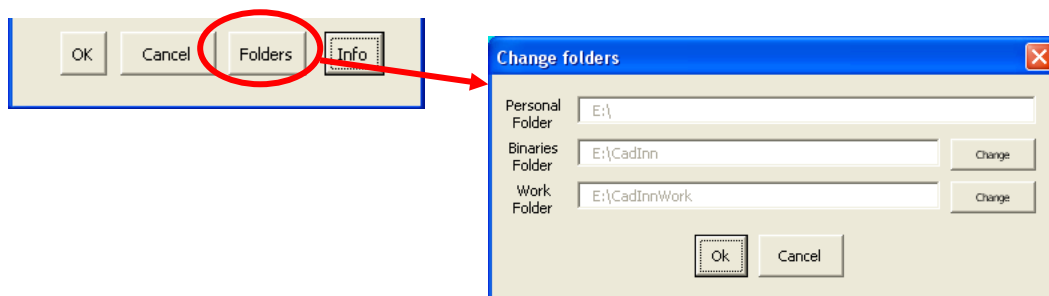
On the main window of **CAD inn'**, you can activate the **Info** command :



## 10. Configuring the folders

---

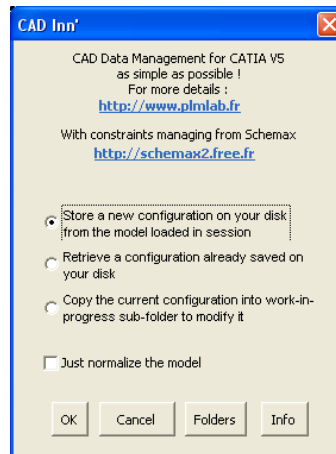
On the main window of **CAD inn'**, you can change the folders that CAD Inn needs to work :



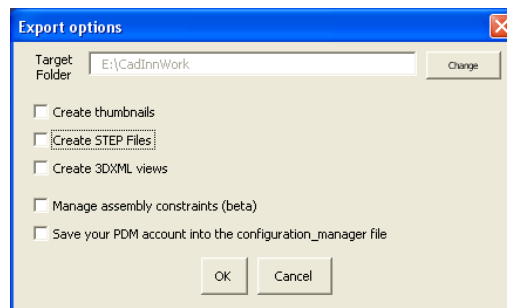
## 11. Save a configuration in your local disk

### A. Save a configuration for the first time

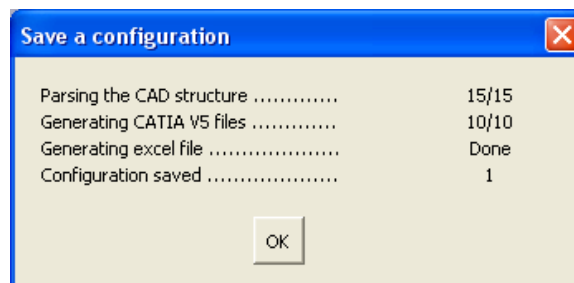
- Before running CAD Inn', a cad model must be loaded in your CATIA V5 session
- Run **CAD Inn'**
- Select **Store a configuration to your disk** option :



- You are asked to set options and you can change the target folder where CAD Inn will place all the files generated during the export :



- All is automatically done by Cadinn. A window shows you the status of the export :



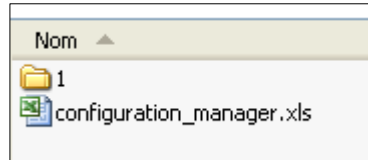
#### What CAD Inn' has done ?

- CAD Inn' replaced the sub-products of your model by internal components. It' the easiest way to manage a CATIA V5 model in a PDM system !



**All the assembly constraints of your model are lost. The parts are now placed with their matrix positions which were generated automatically by CAD Inn.**

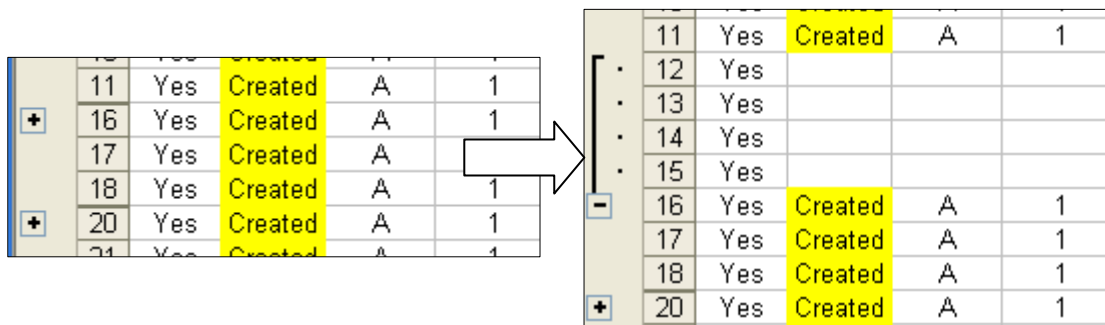
- CAD Inn' created a first subfolder named "1" and copied all the CAD files necessary to open your model. This configuration "1" is now frozen.
- CAD Inn' created a **configuration\_manager.xls** excel files to list all the files contained in the #1 initial configuration :



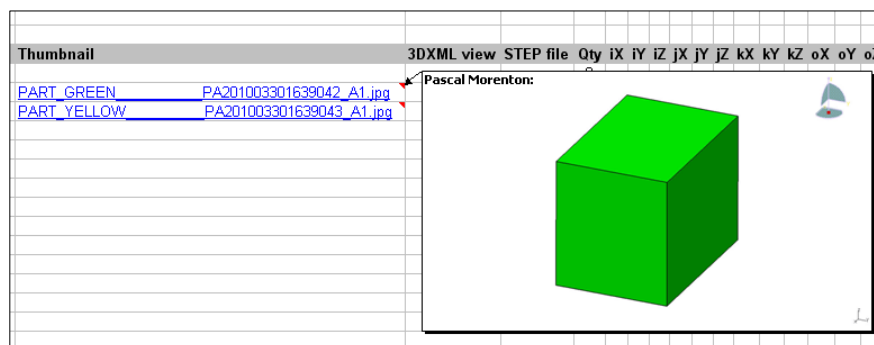
- The excel file contains a summary tab and one tab for each saved configuration :

Active	Part Number	Father Part Number	Name	Type	CATIA V5 File	3DXML view	Qty	iX	iY	iZ	jX	jY	jZ	kX	kY	kZ	oX	oY	oZ	Version	Iteration	Status	Comment	Owner
Yes	PART_PR200911212330411		POCKET_LAMP	Product	POCKET_LAMP	POCKET_LAMP	1	1	0	0	0	1	0	0	0	1	0	0	0	A	1			moren
Yes	PART_PA2009PART_PR2009112123	PART_PR2009112123	PLASTIC_HOU	Part	PLASTIC_HOU	PLASTIC_HOU	1	-1	-0	-0	1	0	0	0	-1	0	0	0	A	1				moren
Yes	PART_PA2009PART_PR2009112123	PART_PR2009112123	ASSY_PCB	Product	ASSY_PCB	ASSY_PCB	1	1	0	0	0	1	0	0	-1	0	0	0	A	1				moren
Yes	PART_PA2009PART_PR2009112123	PART_PR2009112123	PRINTED_CIR	Part	PRINTED_CIR	PRINTED_CIR	1	1	0	0	1	0	0	0	1	0	0	0	A	1				moren
Yes	PART_PA2009PART_PR2009112123	PART_PR2009112123	LED	Part	LED	LED	5	0	1	0	-1	-0	0	0	0	1	12	-0	9	A	1			moren
Yes								0	1	0	-1	-0	0	0	0	1	6	-0	9					
Yes								0	1	0	-1	-0	0	0	0	1	-0	-0	9					
Yes			Load into CATIA V5					0	1	0	-1	0	0	0	0	1	-6	0	9					
Yes								0	1	0	-1	0	0	0	0	1	-12	-0	9					

- Pushing a plus sign expands the grouping of the instances of a part



- If the option « Creating thumbnails » has been activated before saving the configuration, thumbnail can be viewed for each part of your assembly. To see it, just fly over the cell corresponding to the part in the "thumbnails" column :



The columns are the following:

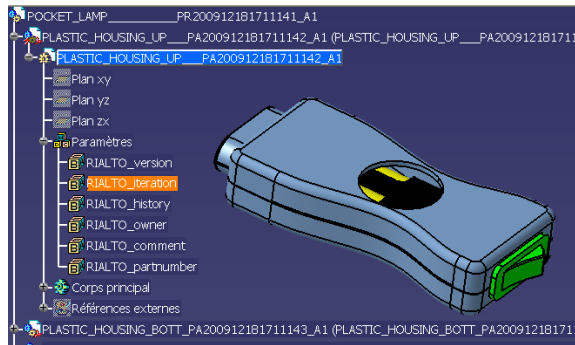
- **Active** : to declare if a product or a part has to be took account during the loading (not yet implemented)
- **Part Number** : the unique identifier of the item
- **Father Part Number** : the father identifier of an item
- **Name** : the name of an item as declared in the CATIA V5 specifications tree
- **Type** : product, part or component
- **CATIA V5 file** : a CATPart file
- **Thumbnail** : if it has been requested, a JPG snapshot of your CAD model is now available
- **3DXML View** : a link to a 3DXML view of the item
- **STEP file** : if it has been requested, a STEP file of your CAD model is now available
- **Qty** : the number of instances of the item
- **iX to oZ** : the position matrix of an instance
- **Version** : the version of the item
- **Iteration** : the iteration of the item
- **Status** : set to "Creation" or "Update", depending of what you have done during the last saving
- **Comment** : the last comment corresponding to the CATIA V5 "PDM\_comment" paramater
- **Owner** : the owner of an item
- **dateStamp** : only for CADInn' administrating

## B. Save modifications into a new configuration

Open a model (see below). And :

- make a modification on a part
- add a part
- remove a part

On each part whom you want to save the modifications, edit the **update** parameter and set it on **True** :



Save the model with **File / Save all** command. The "in work" model will be first saved on your local disk.

Then, run **Cadinn** macro and select **Save a configuration** option. This new configuration will be saved again in the **configuration\_manager.xls**

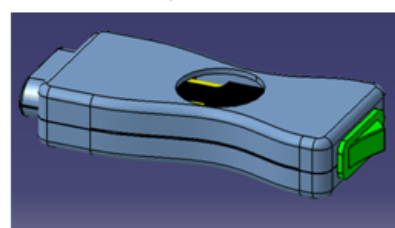
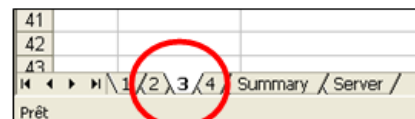
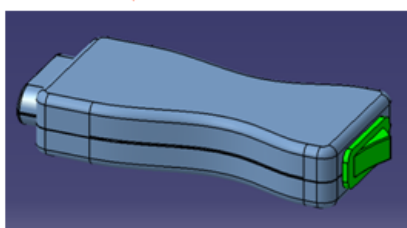
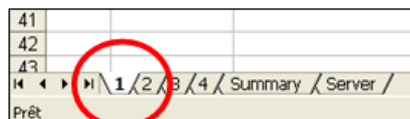
The **summary** sheet store all the configuration that Cadinn has managed for you :

	A	B	C	D	E	F	G	H
1	<b>Config. Id Year Month Day Hour Min Sec Generated by</b>							
2	1	2009	12	18	17	59	41	0,16
3	2	2009	12	18	18	5	58	0,16
4								

(**Generated by** show the release of Cadinn which was used to generate the configurations)

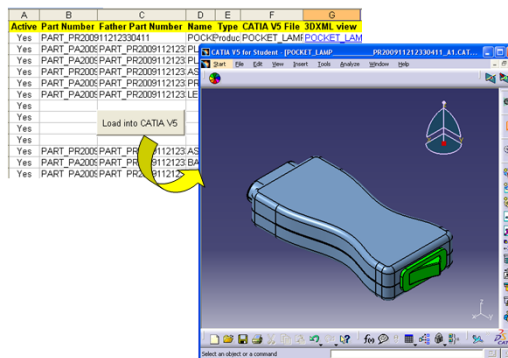
## C. What can you do with the configuration manager ?

To load a configuration, active the corresponding sheet of the configuration manager :



C39		<i>fx</i>	
	A	B	C
1			
2	Build with components	Build with products	Build a flat model
3			
4			
5	<b>Active</b>	<b>Part Number</b>	<b>Father Part Number</b>
6	Yes	PR002170EA6A57201006301550380001	
7	Yes	PA002170EA6A57201006301550380002	PR002170EA6A57201006301550380001

**Build with components** : the original structure of your model is kept but all the CATProducts have been converted into internal components and loaded into your CATIA V5 session. No assembly constraints are no more available : the parts' positions are driven by the position matrix saved in the configuration



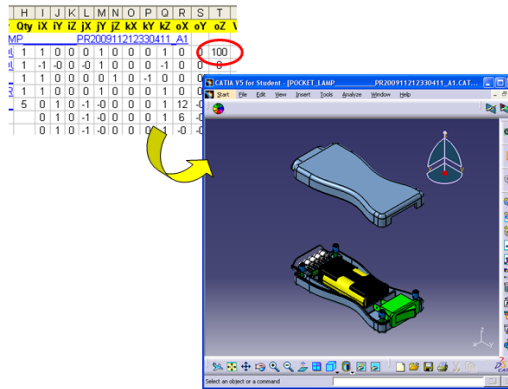
**Build with products** : in this case, the original structure of your model is kept with using CATProducts for each intermediate level.

**Load a flat model** : this command creates a CATIA V5 product with a **“flat structure”** and no assembly constraints : the parts' positions are driven by the position matrix saved in the configuration manager file :



Creating a « flat » model

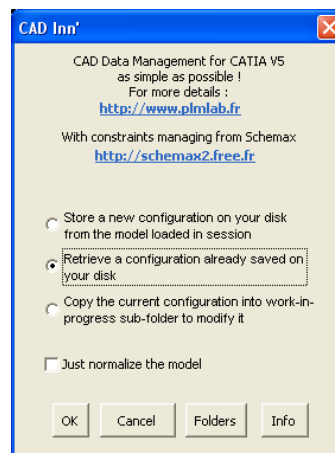
Before loading the model, you can change the position of a part. To do that, simply change the value of one of the position matrix cells. For example, changing the oZ value of the top housing of the lamp lead to this configuration :



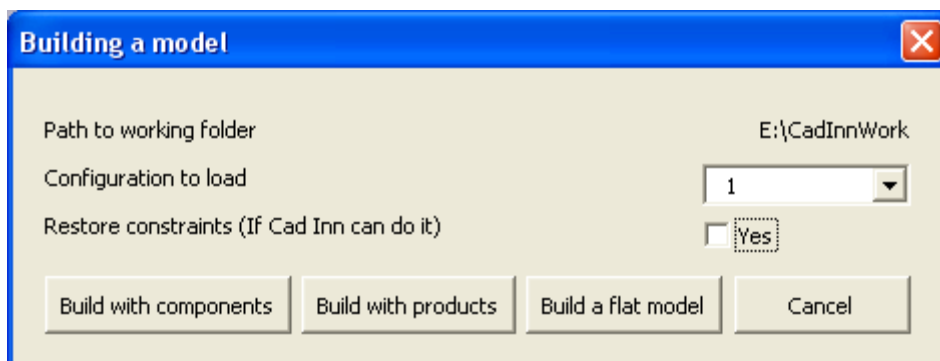
You can also add a line to add a part or an instance to the model, you can change the CATIA file of an item etc.

## 12. Retrieve a configuration from your local disk

- Run CAD Inn'
- Select **Retrieve a configuration already saved on your disk** option



As you can do in excel, you can build a model with components, with CATProducts or with a flat structure :

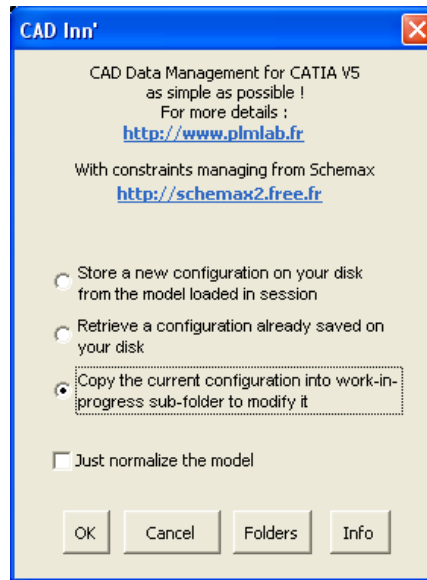


## 13. Copy a configuration to modify it

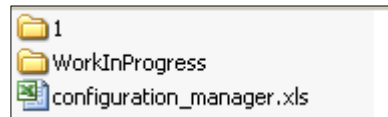
---

For CAD Inn, a configuration is “frozen” : it's a snapshot of a model which shouldn't be modified. If you want to modify your model, first you have to copy it in a “work in progress” subfolder, modify this model then store it in a new configuration. You can do that with CAD Inn :

- a configuration has to be loaded into your CATIA V5 session
- Run CAD Inn'
- Select **Copy the current configuration** option



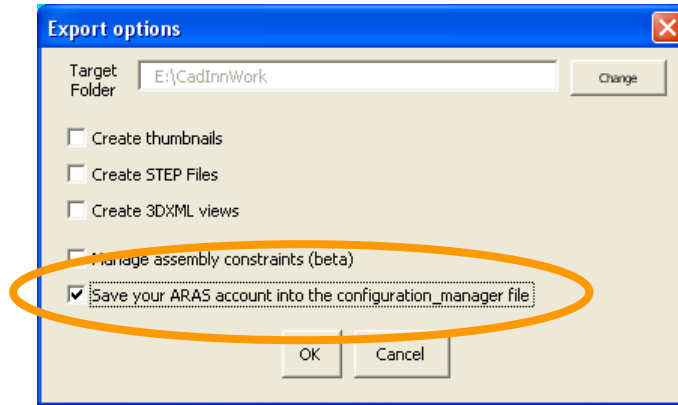
- Then the current configuration will be copied into the “WorkInProgress” subfolder placed into your CadInWork folder :



Now you have to work with the “work in progress” model until you want to save a new configuration.

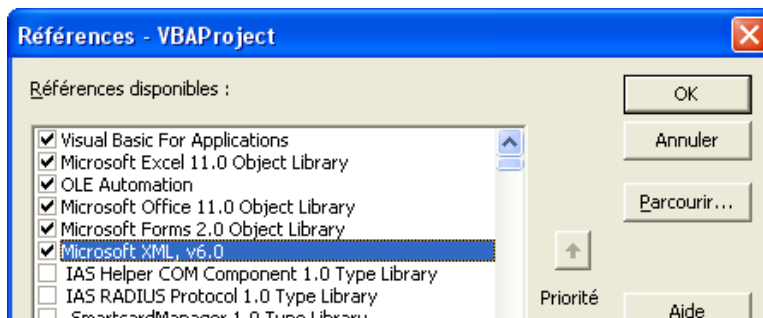
## 14. Test your connection to your ARAS innovator server

When you save a configuration, you can save the parameters extracted from the *cadinn.ini* file into the *configuration\_manager.xls* file :



To test your connection :

- open the *configuration\_manager.xls* and select the **Server** sheet.
- The first time, you have to configure your VBa environment :
  - Run Tools / Macro / Visual basic editor
  - Run Tools / References
  - Select the following libraries



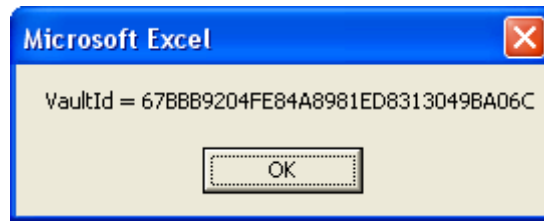
- You can test the server by using the **Test the connection** and **Test the vault access** buttons :

	A	B	C	D
1				
2	Test the connection		Test the vault access	
3				
4				
5	<b>Name</b>	<b>Server type</b>	<b>End point URL</b>	<b>Vault URL</b>
6	Aras	aras	InnovatorServer/	InnovatorS
7				

If the connection works, the following window will appear :



If the vault access works, the following window will appear :



If one of these two tests doesn't work, you can change the parameters directly in the **server** sheet and make other tries.

## 15. Get the list of your projects and their parts

- Select the **Projects** sheet
- Run the **Get your ARAS projects** command :

	A	B
1		
2	Get your ARAS projects	
3		
4		
5	<b>Select Project Name</b>	

The list of all your current projects you can access to will be displayed :

Get your ARAS projects	
<b>Select Project Name</b>	
	XM Portable Satellite Dish Assy
	RIALTO_PocketLamp
	Master_SmartDeck_2.0_Schedule.mpp
	GM proximity remote
	Delco XM Radio
	Delphi Roady2 Product Development
	Charger 3 Button
	Suburban Retrofit
	Ford Focus XM Integration
	300C XM Radio development
	Gasket APQP
	Truck Battery Development
	Car Battery Development
	Ford 500 XM Radio
	Chevy Cobalt XM Radio
	Audi A6 XM Radio
	Ford Explorer XM Radio

You have to select one of them by placing a cross (or another character) into the **Select** column.



Once you have select a project, you can get all the parts' names related to this project saved in your server. To do that, run the **Get the selected project's parts** command :

Select	Part Name	Part Id
	POCKET_LAMP	PR200912221631331
	PLASTIC_HOUSING_UP	PA200912221631332
	PLASTIC_HOUSING_BOTT	PA200912221631333
	ASSY_PCB	PR200912221631334
	PRINTED_CIRCUIT_BOAR	PA200912221631335
	LED	PA200912221631336
	ASSY_BATTERY	PR200912221631337
	BATTERY HOLDER	PA200912221631338
	BATTERY_AA	PA200912221631339
	SWITCH	PA2009122216313310
	GLASS	PA2009122216313311
	INSERTS	CO2009122216313312
	INSERT	PA2009122216313313
	SCREWS	CO2009122216313314
	SCREW	PA2009122216313315
	POCKET_LAMP	PR200912221631331
	PRINTED_CIRCUIT_BOAR	PA200912221631335
	LED	PA200912221631336
	POCKET_LAMP	PR200912221631331
	PRINTED_CIRCUIT_BOAR	PA200912221631335
	LED	PA200912221631336

The **select** column is used for importing parts, see below.

## 16. Get the status of your parts in the PDM system

On each configuration sheet, you can get the status of each part of your model : Have you to save or update the model ?

Active	Status	Version	Iteration	Owner	ToDo	Status	Version	Iteration
Yes	Created	A	1	moren	>>>	None	?	?
Yes	Created	A	1	moren	>>>	None	?	?
Yes	Created	A	1	moren	>>>	None	?	?
Yes								

A green cell indicates that you can export your data to the server.

A orange cell indicates that all the datas have been updated

A red cell indicates that you have to :

- update your local data
- can not upload your local data to the server (because the part is locked by another user)

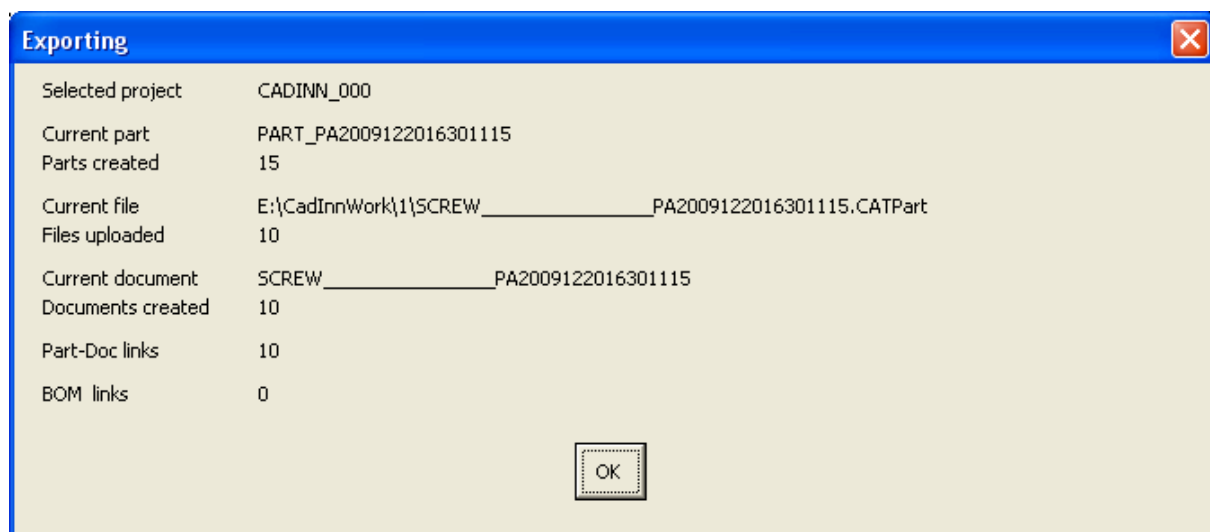
	A	B	C	D	E	F	G	H	I	J
1	Load into CATIA V5		Load a flat model		Get the PDM status		Export to ARAS			
2										
3										
4	*** Local repository ***					*** PDM vault ***				
5	Active	Status	Version	Iteration	Owner	ToDo	Status	Version	Iteration	Owner
6	Yes	Created	A	1	moren	=	Unlocked	A	1	emo Rial
7	Yes	Created	A	1	moren	<<<	Unlocked	A	2	emo Rial
8	Yes	Created	A	2	moren	>>>	Unlocked	A	1	emo Rial
9	Yes									

## 17. Export a configuration to ARAS Innovator

On each configuration sheet, you can export the product structure and the CAD files to your ARAS innovator server :

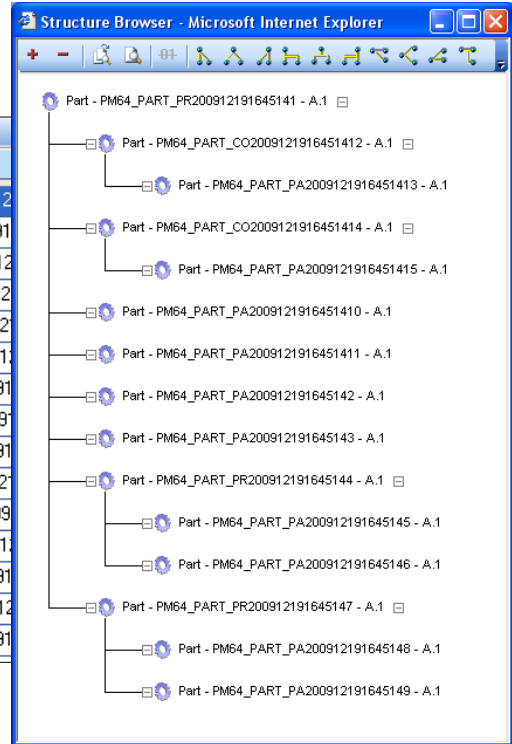
	A	B	C	D	E	F	G	
1	Load into CATIA V5		Load a flat model		Export to ARAS			
2								
3								
4								
5	Active	Part Number	Father Part Number	Part Number	Name	Type	CATIA V5 File	3DXML view
6	Yes	PART_PR200912201717531			POCKE	Product	POCKET_LAMP	P
7	Yes	PART_PA200912201717531	PART_PR2009122017		PLAST	Part	PLASTIC_HOU	<a href="#">PLASTIC_HOU</a>
8	Yes	PART_PA200912201717531	PART_PR2009122017		PLAST	Part	PLASTIC_HOU	<a href="#">PLASTIC_HOU</a>

During exporting, a window show you what has be done by CAD Inn :



After the export, your product is available on your ARAS Innvoator server :

Part Number	Revision	Name
PM64*		
PM64_PART_CO2009121916451412	A	INSERTS_____CO200912
PM64_PART_CO2009121916451414	A	SCREWS_____CO20091
PM64_PART_PA2009121916451410	A	SWITCH_____PA200912
PM64_PART_PA2009121916451411	A	GLASS_____PA200912
PM64_PART_PA2009121916451413	A	INSERT_____PA200912
PM64_PART_PA2009121916451415	A	SCREW_____PA20091
PM64_PART_PA200912191645142	A	PLASTIC_HOUSING_UP____PA20091
PM64_PART_PA200912191645143	A	PLASTIC_HOUSING_BOTT_PA2009
PM64_PART_PA200912191645145	A	PRINTED_CIRCUIT_BOAR_PA20091
PM64_PART_PA200912191645146	A	LED_____PA200912
PM64_PART_PA200912191645148	A	BATTERY HOLDER_____PA2009
PM64_PART_PA200912191645149	A	BATTERY_AA_____PA20091
PM64_PART_PR200912191645141	A	POCKET_LAMP_____PR20091
PM64_PART_PR200912191645144	A	ASSY_PCB_____PR200912
PM64_PART_PR200912191645147	A	ASSY_BATTERY_____PR20091



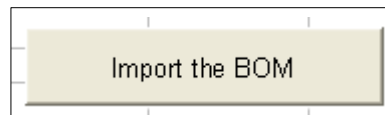
**For reporting and debugging, a *CadInnExport.log* file was generated during the export and was placed in your CAD inn' working directory. Inside, all the SOAP transactions has been traced.**

## 18. Import a configuration from ARAS Innovator

Select **Projects** sheet. Select a part (see **12. Get the list of your projects and their parts**) :

Get the selected project's parts		
Select	Part Name	
<input checked="" type="checkbox"/>	POCKET_LAMP_____	PR200912231225221
<input type="checkbox"/>	PLASTIC_HOUSING_UP____	PA200912231225222
<input type="checkbox"/>	PLASTIC_HOUSING_BOTT_	PA200912231225223
<input type="checkbox"/>	ASSY_PCB_____	PR200912231225224
<input type="checkbox"/>	PRINTED_CIRCUIT_BOAR_	PA200912231225225
<input type="checkbox"/>	LED_____	PA200912231225226
<input type="checkbox"/>	ASSY_BATTERY_____	PR200912231225227
<input type="checkbox"/>	BATTERY HOLDER_____	PA200912231225228
<input type="checkbox"/>	BATTERY_AA_____	PA200912231225229
<input type="checkbox"/>	SWITCH_____	PA2009122312252210
<input type="checkbox"/>	GLASS_____	PA2009122312252211
<input type="checkbox"/>	INSERTS_____	CO2009122312252212
<input type="checkbox"/>	INSERT_____	PA2009122312252213
<input type="checkbox"/>	SCREWS_____	CO2009122312252214
<input type="checkbox"/>	SCREW_____	PA2009122312252215

Now you can import only the BOM structure without downloading the CAD files. To do that, use the **Import the BOM** button available on the top and on the right of the **Projects** sheet :



When you launch one of this command, a new sheet will be create. Its name is the current "date stamp", for example : **20091210145612** (ie 2009-12-10 at 14:56:12) :

Your ARAS server will be asked to create the BOM structure of the selected part :



At the end of the command, you'll have a new sheet which looks like that :

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
1																						
2	Load into CATIA V5																					
3																						
4																						
5	Active	Part Number	Father Part Number	Part Number	Name	Type	CATIA V5 File	3DXML view	Qty	iX	iY	iZ	jX	jY	jZ	kX	kY	kZ	oX	oY	oZ	
6	Yes	PART_PR200912231225221			POCKE	Product			0													
7	Yes	PART_PA2009	PART_PR2009122312		PLAST	Part	PLASTIC_HOUSING_UP__P		1	1	0	0	0	1	0	0	0	0	1	0	0	0
8	Yes	PART_PA2009	PART_PR2009122312		PLAST	Part	PLASTIC_HOUSING_BOTT_P		1	-1	-0	0	-0	1	0	0	0	0	-1	0	0	0
9	Yes	PART_PR2009	PART_PR2009122312		ASSY	Product			1	1	0	0	0	0	1	0	-1	0	0	0	0	0
10	Yes	PART_PA2009	PART_PR2009122312		PRINTE	Part	PRINTED_CIRCUIT_BOAR_PA		1	1	0	0	0	1	0	0	0	0	1	0	0	0
11	Yes	PART_PA2009	PART_PR2009122312		LED	Part	LED_____PA2		5	0	1	0	-1	-0	0	0	0	0	1	12	-0	9
12	Yes								0	1	0	-1	-0	0	0	0	0	1	6	-0	9	
13	Yes								0	1	0	-1	-0	0	0	0	0	1	-0	-0	9	
14	Yes								0	1	0	-1	0	0	0	0	0	1	-6	0	9	
15	Yes								0	1	0	-1	0	0	0	0	0	1	-12	-0	9	
16	Yes	PART_PR2009	PART_PR2009122312		ASSY	Product			1	1	0	0	0	0	1	0	-1	-0	0	35	0	
17	Yes	PART_PA2009	PART_PR2009122312		BATTE	Part	BATTERY HOLDER_____P		1	1	0	0	0	1	0	0	0	0	1	0	0	0
18	Yes	PART_PA2009	PART_PR2009122312		BATTE	Part	BATTERY_AA_____PA		2	1	0	0	0	1	0	0	0	0	-8	0	##	
19	Yes								-1	0	0	0	1	0	0	0	0	-1	8	0	23	
20	Yes	PART_PA2009	PART_PR2009122312		SWITC	Part	SWITCH_____PA2		1	-0	-0	-1	-1	0	0	-0	1	-0	0	95	0	
21	Yes	PART_PA2009	PART_PR2009122312		GLASS	Part	GLASS_____PA2		1	1	0	0	0	1	0	0	0	0	1	0	0	0
22	Yes	PART_CO2009	PART_PR2009122312		INSER	Product			1	1	0	0	0	1	0	0	0	0	1	0	0	0
23	Yes	PART_PA2009	PART_CO2009122312		INSER	Part	INSERT_____PA2		4	1	0	0	0	-1	-0	0	0	-1	-20	-6	3	
24	Yes								1	0	0	0	-1	-0	0	0	-1	20	-6	3		

To download the files corresponding to this BOM, use the **Import from ARAS** button. CAD Inn will download all the files necessary for viewing the assembly. You can open it with the **Load into CATIA V5 button**.

## 19. Development and contact

For more questions about the **Cadinn project** or for any question about using or configuring **Cadinn**, feel free to contact :

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The web page dedicated to this project is the following :

<http://www.plmlab.fr/index.php?page=cadinn>